WATER SUPPLY OUTLOOK

KOOTENAI RIVER BASIN

MONTANA

as of
MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

Streamflow in the Kootenai River drainage is forecast to be near average for the April through September period. The Kootenai River is forecast to flow a little more water than it did last year. Forecasts have been begun on the Fisher River and they also are for near average flows.

Snow cover is about 25 percent more than last year at this time and 11 percent greater than the 1948-62 average. Generally, the snow pack is above average in the Montana portion of the drainage, decreasing farther north to below average in the headwaters in British Columbia.

Report prepared by
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"The Conservation of Water begins with the Snow Survey"

KOOTENAI RIVER BASIN

LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary

See Insert

C A N A D A

I D A H O

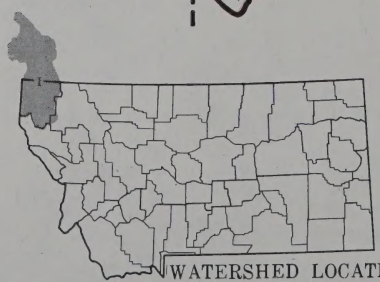
L I N C O L N

F L A T H E A D

L I N C O L N S. W. C. D.

Yaak River
Yaak
Troy
Libby
Libby Creek
KOOTENAI RIVER
MONT. 37
Rexford
Eureka
Tobacco River
Warland
Fisher Creek
Wolf Creek
Happy Inn River
U.S. 93
U.S. 2
3050
3045
3030
3020
15A01
14A07
14A11
16A04
15A02
15B11
15B15

10 0 10
SCALE IN MILES



WATERSHED LOCATION

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
15B11	Baree Creek	5500	3/1	122	45.8	31.8	-
15B15	Baree Trail	3800	3/1	34	12.2	-	-
14A04	Brush Creek	5000	3/1	38	13.2	11.8	12.7*
BC 10	Fernie	3500	2/26	36	12.6	8.5	9.0
BC 12A	Field	4200	2/28	30	8.2	4.2	5.8
BC 11	Glacier	4100	3/1	72	21.7	23.4	24.0*
14A11	Graves Creek	4300	2/25	56	19.9	-	-
BC 43	Gray Creek	5100	2/28	61	16.9	14.7	16.7*
BC 33	Kicking Horse	5400	2/28	58	16.4	11.8	13.3
BC 20B	Kimberley	3800	3/1	32	10.5	6.7	8.4
BC 32	Marble Canyon	5000	3/1	59	13.7	11.2	13.5
BC 10B	Morrissey Ridge	6100	3/2	84	32.5	-	-
BC 10A	New Fernie	4100	2/26	53	19.1	14.0	13.2*
15A01	Red Mountain	6000	2/26	60	20.0	12.6	18.0
BC 8A	Sinclair Pass	4500	3/1	26	5.1	4.3	5.8*
BC 20A	Sullivan Mine	5100	2/26	43	12.5	9.9	13.4
BC 41	Upper Elk River	4400	2/22	27	9.0	-	7.9
14A07	Weasel Divide	5450	2/25	92	35.4	30.7	30.4*

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
15B15M	Baree Trail	3800	48	7.5	3/2	6.3	-	-
14A10M	Murphy Lake R.S.	3000	48	22.6	3/1	21.8	-	-
15A02M	Raven R.S.	3050	48	23.0			-	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	FISHER RIVER					
3020	Jennings (near)	Apr-Sept	335	105		318
	KOOTENAI RIVER					
3030	Libby (at)	Apr-Sept	8320	103	7802	8096
3050	Leonia (at)	Apr-Sept	9636	103	9037	9327

*PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK

FLATHEAD RIVER BASIN
MONTANA

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Data included in this report were obtained in cooperation with other Federal, State and private organizations

Streamflow in the Flathead River drainage during the April through September period is forecast to rank between the second and fourth highest flow on record in the past 30 years. The Flathead River at Columbia Falls has produced more water than the forecast for this year only in 1954 and 1959. The Swan River exceeded this year's forecast only in 1959. There is little doubt that high water will occur during spring runoff. However, the magnitude will depend primarily on temperature and precipitation during the snowmelt period. There are two factors that are favorable this year. The snow pack is extremely dense for this time of year and is not as susceptible to quick melt as would be a less dense pack. Also, the river channels were greatly enlarged last season and are now capable of carrying additional runoff within their confines.

Snow measurements indicate the mountain snow cover is about 40 percent greater than a year ago and 30 percent above the 1948-62 average. Many high elevation snow courses have maximum of record or near maximum water content for this time of year.

Report prepared by
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"The Conservation of Water begins with the Snow Survey"

FLATHEAD LAKE RIVER BASIN

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13A15	Badger Pass	6900	3/1	108	38.6	29.4	-
14B03	Bassoo Peak	5150	2/23	38	10.0	8.6	11.1*
13A11	Beaver Lake	5900	3/1	79	25.7	17.9	-
13B03	Big Creek	6750	2/25	121	48.4	35.6	38.5
14A04	Brush Creek	5000	3/1	38	13.2	11.8	12.7*
13A17	Camp Misery	6400	2/24	140	54.2	37.0	-
13B10	Coyote Hill	4200	2/26	43	13.4	8.7	10.2
13A02	Desert Mountain	5600	2/23	56	20.0	12.2	14.1*
13B04	Fatty Creek	5500	2/25	69	23.4	20.4	-
BC 10	Fernie	3500	2/26	36	12.6	8.5	9.0
14A11	Graves Creek	4300	2/25	56	19.9	-	-
14A09	Griffin Creek Divide	5150	2/24	40	12.6	10.0	12.4*
13B12	Gunsight Lake	6300	3/2	123	45.7	30.2	-
14A03	Hell Roaring Divide	5770	2/26	94	35.3	23.8	26.8*
13B13	Holbrook	4530	3/1	38	12.7	9.8	10.2*
14A06	Kishenehn	3890	3/1	60	13.2	8.1	9.9
14A05	Logan Creek	4300	3/1	32	8.8	7.4	8.8*
13A05	Marias Pass	5250	2/25	65	21.0	12.0	17.3
13A16	Mineral Creek	4000	2/28	70	26.1	18.4	19.8
BC 10B	Morrissey Ridge	6100	3/2	84	32.5	-	-
BC 10A	New Fernie	4100	2/26	53	19.1	14.0	13.2*
13B07	North Fork Jocko	6330	2/26	130	49.8	41.0	39.8
13B02	Spotted Bear Mountain	7000	3/2	53	19.7	11.3	14.6
13A10	Strawberry Lake	5600	3/4	125	48.6	32.2	35.3*
13C01	Stuart Mountain	7400	2/28	92	32.7	24.5	26.5*
13B01	Trinkus Lake	6500	3/4	131	48.9	35.3	36.3*
14B01	TV Mountain	6800	2/26	62	21.7	14.0	14.9*
13B11	Twin Creeks	3580	3/2	40	14.6	12.2	12.4*
13B05	Upper Holland Lake	7000	3/1	117	39.1	28.0	29.8*
14A07	Weasel Divide	5450	2/25	92	35.4	30.7	30.4*

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13A02M	Desert Mountain	5600	54	8.4	2/23	7.5	5.8	7.0
13A05M	Marias Pass	5280	54	6.5	3/1	5.8	4.4	5.3
13B19M	Seeley Lake	4030	48	11.9			1.9	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	NORTH FORK FLATHEAD RIVER					
3555	Columbia Falls (near)	Apr-Sept	2330	115	2232	2027
	MIDDLE FORK FLATHEAD RIVER					
3585	West Glacier (near)	Apr-Sept	2310	120	2440	1923
	SOUTH FORK FLATHEAD RIVER					
3625	Columbia Falls (near)(17)	Apr-Sept	2920	123	2595	2381
	FLATHEAD RIVER					
3630	Columbia Falls (at)(17)	Apr-Sept	7750	119	7389	6497
3720	Polson (near)(18)	Apr-Sept	9380	120	8553	7778
	SWAN RIVER					
3700	Big Fork (near)	Apr-Sept	850	122	706	694

(17) Adjusted for storage in Hungry Horse Reservoir.
(18) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3620	Hungry Horse	3428.0	2370.0	2297.0	2436.3
3710	Flathead Lake	1791.0	1143.0	1161.0	844.6
3757	Camas (4)	45.2	20.3	18.7	32.2
3800	Mission Valley (8)	100.3	39.3	19.6	34.5

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK

LOWER CLARK FORK RIVER BASIN

MONTANA

as of

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

Streamflow in the lower reaches of the Clark Fork below the junction with the Flathead is forecast to be greater during the April through September period than in any year in the past 30 years of record. Upstream, the Blackfoot is forecast near the record flow of 1943, and the Bitterroot just under the high years of 1943 and 1948. The Clark Fork above Missoula is expected to produce the fourth highest volume in the past 30 years. There is little doubt that high water will occur during spring runoff, but the magnitude will be determined by temperature and precipitation during the snowmelt period. Two factors are favorable this year. The snow pack is extremely dense for this time of year and is not as susceptible to fast melt as would be a less dense pack. Also, the river channels were enlarged last season and are now capable of carrying additional runoff within their confines.

Snow measurements indicate the mountain snow pack is about 30 percent greater than a year ago and about 20 percent above the 1948-62 average. Many high elevation snow courses in the upper reaches of the drainage have maximum of record or near maximum water content for this time of year.

Report prepared by
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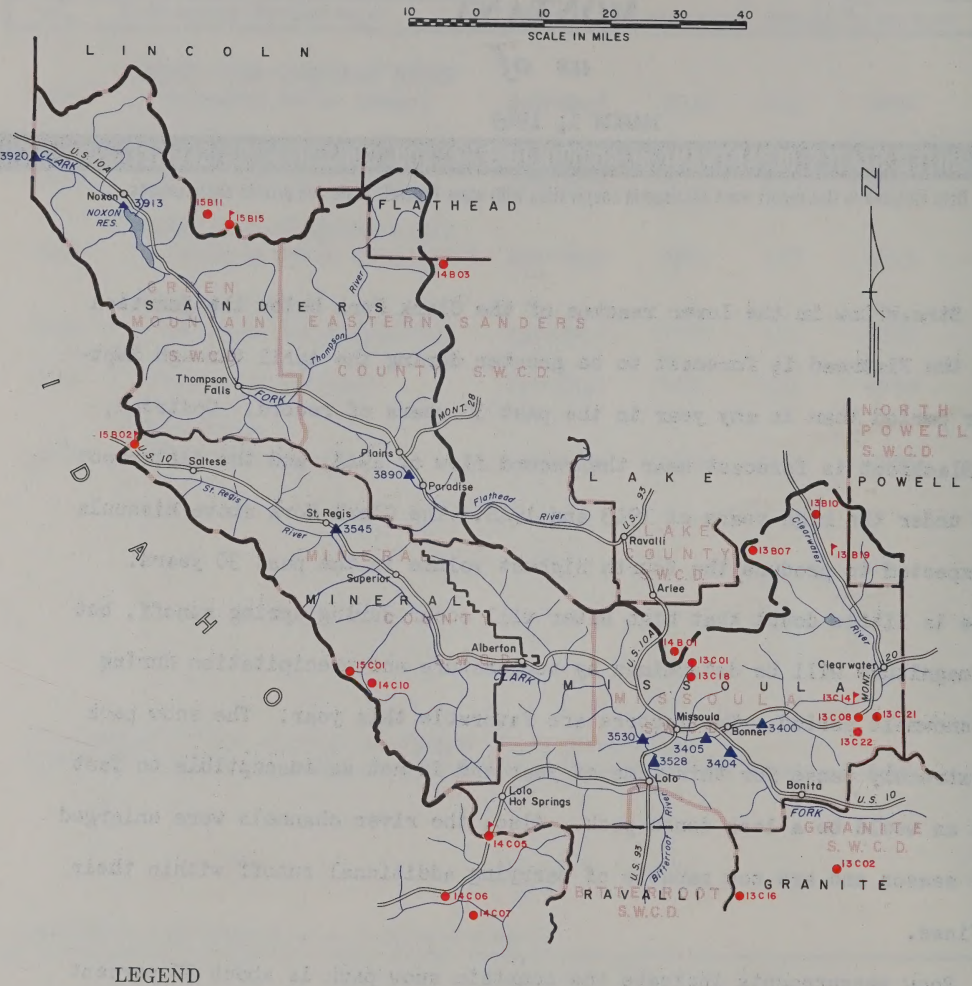
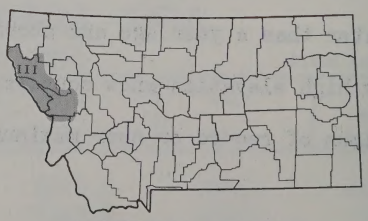
"The Conservation of Water begins with the Snow Survey"

LOWER CLARK FORK RIVER BASIN



LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary



WATERSHED LOCATION

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13C16	Ambrose	6480	2/24	48	14.8	12.5	12.1*
15B11	Baree Creek	5500	3/1	122	45.8	31.8	-
15B15	Baree Trail	3800	3/1	34	12.2	-	-
14B03	Bassoo Peak	5150	2/23	38	10.0	8.6	11.1*
13B10	Coyote Hill	4200	2/26	43	13.4	8.7	10.2
14C10	Heart Lake Trail	4800	2/25	68	23.8	-	-
15C01	Hoodoo Creek	6200	2/25	133	52.3	37.4	45.3*
14C05	Lolo Pass	5230	2/25	94	34.0	28.4	32.2*
15B02	Lookout	5250	2/25	97	33.5	31.7	34.8*
13C21	Lubrecht Forest No. 3	5450	2/27	28	8.2	8.0	7.4*
13C22	Lubrecht Forest No. 4	4650	2/27	15	4.2	4.8	3.9*
13C08	Lubrecht Forest No. 6	4040	2/27	16	5.0	5.4	4.6*
13B07	North Fork Jocko	6330	2/26	130	49.8	41.0	39.8
14C04	Savage Pass	6600	2/26	80	29.4	22.4	25.0*
13C02	Slide Rock Mountain	7100	2/24	54	17.6	13.0	12.6*
13C18	Spring Gulch	6000	2/28	57	16.0	11.1	10.5*
13C01	Stuart Mountain	7400	2/28	92	32.7	24.5	26.5*
14B01	TV Mountain	6800	2/26	62	21.7	14.0	14.9*

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
15B15M	Baree Trail	3800	48	7.5	3/2	6.3	-	-
14C05M	Lolo Pass	5250	48	10.6	2/25	7.4	5.3	-
13B19M	Seeley Lake	4030	48	11.9			1.9	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	BLACKFOOT RIVER					
3400	Bonner (near)	Apr-Sept	1350	130	1105	1036
	BITTERROOT RIVER					
3528	Missoula (at)(16)	Apr-Sept	2010	129	1731	1553
	CLARK FORK RIVER					
3404	Milltown (above)(14)	Apr-Sept	990	123	1025	802
3405	Missoula (above)	Apr-Sept	2340	127	2130	1838
3530	Missoula (below)	Apr-Sept	4350	128	3861	3391
3545	St. Regis (at)	Apr-Sept	5880	127	5033	4642
3890	Plains (near)(18)	Apr-Sept	15600	122	13905	12793
3920	Whitehorse Rapids (at)(19)	Apr-Sept	17500	122		14398

(14) Difference in observed flow, Clark Fork above Missoula and Blackfoot near Bonner.
(16) Difference in observed flow, Clark Fork above and below Missoula.
(18) Adjusted for storage in Flathead Lake and Hungry Horse Reservoir.
(19) Adjusted for storage in Flathead Lake, Hungry Horse and Noxon Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3913	Noxon Rapids	334.6		282.9	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK

UPPER CLARK FORK RIVER BASIN

MONTANA

as of

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is excellent in the Upper Clark Fork area. The snow pack is very dense for this time of year and will help provide a good late season irrigation water supply. Streamflow for the April-September period is forecast to rank between fourth and fifth highest in the past 30 years on the Clark Fork drainage. On the Blackfoot, streamflow is forecast to be about equal to the maximum runoff in 1943.

There is little question that high water will occur. The magnitude will depend almost entirely on the temperature and precipitation during the snowmelt season. Two factors are favorable this year. The dense snow pack is not as susceptible to fast melt as would be a less dense pack. Also, the river channels were enlarged last year and are now capable of carrying additional runoff within their confines.

Snow measurements show the mountain snow pack is about 30 percent greater than a year ago and 35 percent above the 1948-62 average. Many high elevation snow courses have maximum of record or near maximum water content for this time of year.

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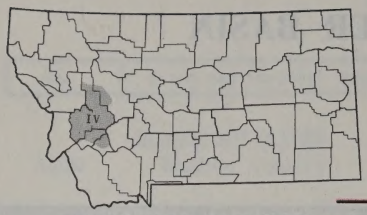
UPPER CLARK FORK RIVER BASIN



WATERSHED LOCATION

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13C16	Ambrose	6480	2/24	48	14.8	12.5	12.1*
13C13	Black Pine	7100	2/25	48	16.4	12.6	11.3*
12C05	Chessman Reservoir	6200	3/2	16	3.8	6.3	4.0
12B10	Copper Creek	5700	2/23	50	16.8	13.1	-
12B11	Cotter Mine	6250	2/23	56	20.0	13.6	-
13C09	El Dorado Mine	7800	2/23	74	25.2	18.4	17.6*
13C11	Fred Burr Pass	8000	2/26	85	33.0	20.3	23.8*
13C10	Gold Creek Lake	7200	2/23	58	18.4	14.4	13.4*
13C04	Intergaard	6450	3/1	33	10.0	7.2	7.2
13C21	Lubrecht Forest No. 3	5450	2/27	28	8.2	8.0	7.4*
13C22	Lubrecht Forest No. 4	4650	2/27	15	4.2	4.8	3.9*
13C08	Lubrecht Forest No. 6	4040	2/27	16	5.0	5.4	4.6*
12D01	Pipestone Pass	7200	2/26	20	5.2	4.0	4.5
13C12	Red Lion	7100	2/26	62	21.8	13.0	13.8*
13C03	Skalkaho Summit	7260	2/25	86	32.6	20.5	22.5*
13C02	Slide Rock Mountain	7100	2/24	54	17.6	13.0	12.6*
13C05	Southern Cross	6500	3/1	28	7.7	7.2	5.6
12C01	Stemple Pass	6900	3/3	42	11.9	10.0	9.2
13C07	Storm Lake	7780	2/26	48	16.4	11.4	11.7*
13C06	Stuart Mill	6500	3/1	28	7.8	7.3	5.9
12C02	Ten Mile Lower	6250	3/2	30	7.7	8.0	6.3
12C03	Ten Mile Middle	6800	3/1	45	12.1	10.7	9.1
12C04	Ten Mile Upper	8000	3/1	51	16.3	14.4	11.7

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13C15M	Georgetown Lake	6450	48	9.0	2/26	2.8	2.5	-
13C03M	Skalkaho Summit	7260	48	10.8	2/25	8.9	-	-
12C08M	Stemple Pass	6350	48	5.9	2/25	4.2	3.9	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	FLINT CREEK					
3301	Boulder Creek (below)(13)	Apr-Sept	88.5	121	88.7	73.0
	MIDDLE FORK ROCK CREEK					
3320	Philipsburg (near)	Apr-Sept	97.0	125	86.9	77.8
	BLACKFOOT RIVER					
3400	Bonner (near)	Apr-Sept	1350	130	1105	1036
	CLARK FORK RIVER					
3404	Milltown (above)(14)	Apr-Sept	990	123	1025	802

(13) Sum, Flint Creek at Maxville and Boulder Creek at Maxville.
(14) Difference in observed flow, Clark Fork above Missoula and Blackfoot near Bonner.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3250	Georgetown Lake	31.0	26.9	27.4	23.2

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK
BITTERROOT RIVER BASIN
MONTANA
as of
MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is excellent in the Bitterroot area. The snow pack is very dense for this time of year and will help provide a good late season irrigation water supply.

Streamflow in the Bitterroot for the April through September period is forecast to rank about third highest in the past 30 years and near the maximum years of 1943 and 1948. Blodgett Creek is forecast to produce more water this year than any previous year since records began in 1947. There is little question that high water will occur. The magnitude will depend almost entirely on temperatures and precipitation during the snow-melt season. There are three factors that are favorable this year. The dense snow pack is not as susceptible to fast melt as would be a less dense pack. Soil moisture in the upper elevations varies from below average to dry and will absorb some of the water from the snow. Also, river channels were enlarged last year and are now capable of carrying additional runoff within their confines.

Snow measurements indicate the mountain snow pack is about 30 percent more than last year at this time and about 25 percent above the 1948-62 average. Many high elevation snow courses have maximum or near maximum of record water content for this time of year. An additional snow course, Saddle Mountain, has been established west of Lost Trail Pass.

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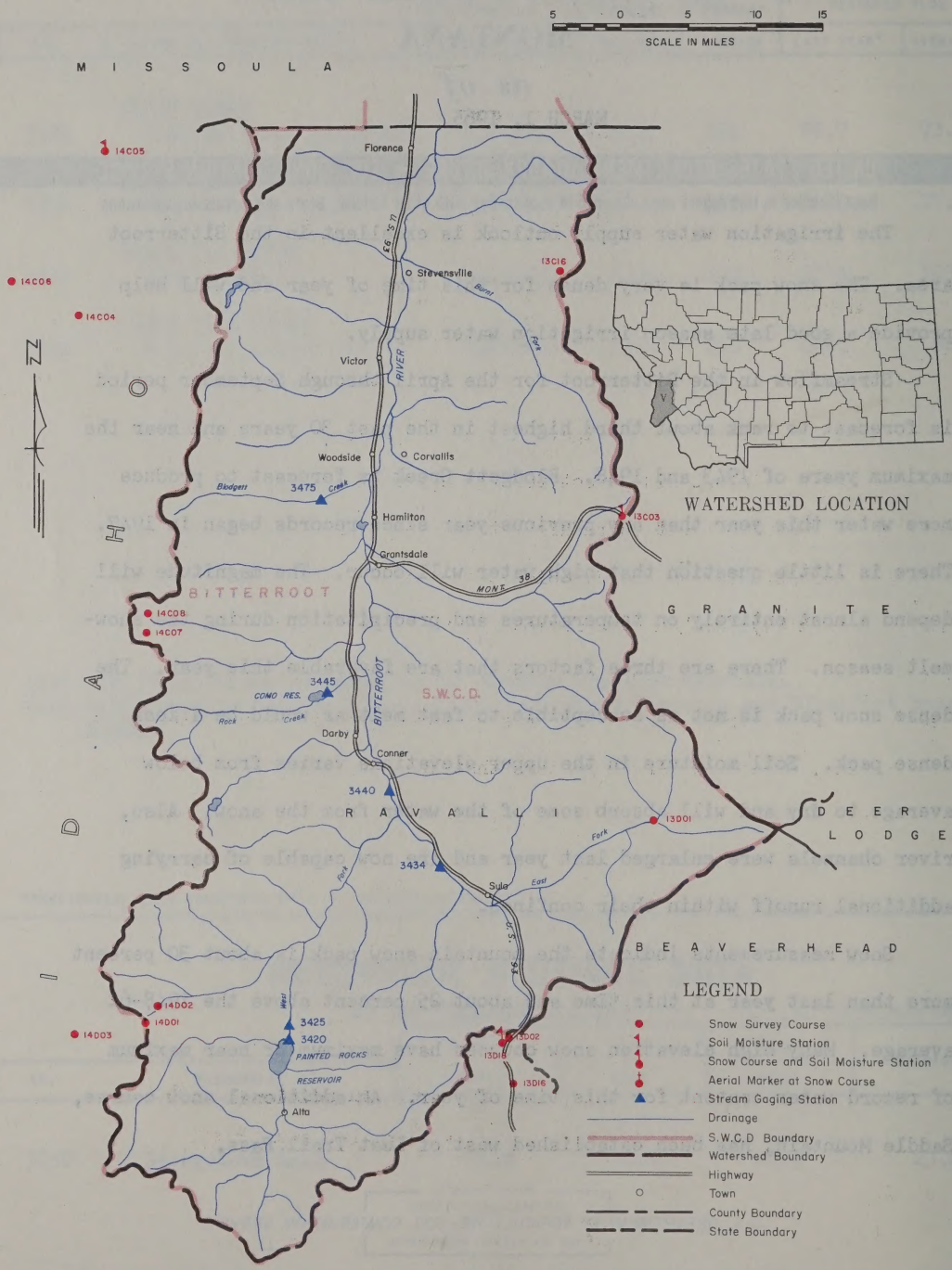
BITTERROOT RIVER BASIN



SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13C16	Ambrose	6480	2/24	48	14.8	12.5	12.1*
13D01	East Fork R.S.	5400	2/26	32	9.4	7.0	7.1*
13D02	Gibbons Pass	7100	2/25	80	27.5	18.8	21.0
14C05	Lolo Pass	5230	2/25	94	34.0	28.4	32.2*
14C07	Lost Horse	5940	3/1	102	36.1	30.9	30.3*
13D16	Moose Creek	6200	2/25	65	21.0	16.2	14.9
14D02	Nez Perce Camp	5580	2/23	63	18.4	16.0	12.8*
14D01	Nez Perce Pass	6570	2/23	69	20.8	16.0	14.8*
13D22	Saddle Mountain	7940	2/17	86	30.0	-	-
14C04	Savage Pass	6600	2/26	80	29.4	22.4	25.0*
13C03	Skalkaho Summit	7260	2/25	86	32.6	20.5	22.5*
14C08	Twin Lakes	6510	3/1	133	47.0	36.4	39.5*

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13D18M	Gibbons Pass	7100	48	7.1	2/26	5.5	5.5	-
14C05M	Lolo Pass	5250	48	10.6	2/25	7.4	5.3	-
13C03M	Skalkaho Summit	7260	48	10.8	2/25	8.9	-	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	WEST FORK BITTERROOT RIVER					
3425	Conner (near)(15)	Apr-Sept	225	125		179
	BITTERROOT RIVER					
3440	Darby (near)	Apr-Sept	750	129	730	582
3528	Missoula (at)(16)	Apr-Sept	2010	129	1731	1553
	BLODGETT CREEK					
3475	Corvallis (near)	Apr-Sept	57.0	128		44.6

(15) Adjusted for storage in Painted Rocks Reservoir.
(16) Difference in observed flow, Clark Fork above and below Missoula.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3420	Painted Rocks	31.7		21.8	13.5
3445	Como	34.9	15.4	7.8	11.8

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK
MARIAS, TETON and SUN RIVER BASINS
MONTANA
as of
MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Data included in this report were obtained in cooperation with other Federal, State and private organizations

The water supply outlook for irrigation is excellent in the Sun, Teton and Marias River areas. Late season irrigation water supplies are expected to be good. The snow pack is very dense for this time of year and should help delay snowmelt. April through September streamflow is forecast to rank about fourth highest on record in the past 30 years on the Sun, Marias and Missouri Rivers. Volume runoff exceeded this year's forecast only in 1943, 1948 and 1964.

There is little question that high water will occur. The magnitude will depend almost entirely on temperatures and precipitation during the snowmelt period. Two factors are favorable this year. The dense snow pack is not as susceptible to fast melt as would be a less dense pack. Stream channels were enlarged considerably last year and are now capable of carrying additional runoff within their confines.

Snow measurements indicate the mountain snow pack is about 60 percent greater than a year ago and about 35 percent above the 1948-62 average. Many high elevation snow courses have maximum or near maximum of record water content for this time of year.

Report prepared by
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MARIAS, TETON and SUN RIVER BASINS

10 0 10 20 30 40
SCALE IN MILES

C A N A D A

GLACIER
TOOLE
LIBERTY
HILL
PONDERA
TETON
CHOUTEAU
LEWIS & CLARK
CASCADE

Babb
Sunburst
Cut Bank
Browning
Shelby
Chester
East Glacier Park
Tiber Dam
Conrad
Dutton
Choteau
Ft. Benton
Fairfield
Great Falls
Augusta
Cascade

Milk River
Cut Bank Creek
Medicine Creek
Marias River
Badger Creek
Birch Creek
Lake Frances
Muddy Creek
Teton River
Pishkun Res.
Sun River
Missouri River

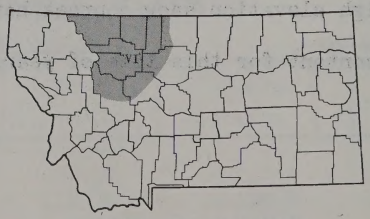
U.S. 89
U.S. 91
U.S. 2
U.S. 87
U.S. 87 & 89
MONT. 21
MONT. 200
MONT. 287

13A08 13A03 13A14 13A06 13A07 13A16 13A05 13A15 13A11 12A01 12B01 12B02 12B03 12B04 12B06 12B07 12B09

0990 0920 0925 0955 0940 0995 1013 0908 0795 0786 0805 0820

LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary



WATERSHED LOCATION

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13A15	Badger Pass	6900	3/1	108	38.6	29.4	-
13A11	Beaver Lake	5900	3/1	79	25.7	17.9	-
12B06	Cabin Creek	5400	3/1	32	9.7	4.9	6.8*
12B09	Five-Bull	5600	2/24	33	9.8	5.4	6.1*
12A01	Freight Creek	6000	2/25	55	20.4	11.2	14.5
12B07	Goat Mountain	7000	2/28	50	13.5	9.8	10.6
13A05	Marias Pass	5250	2/25	65	21.0	12.0	17.3
13A16	Mineral Creek	4000	2/28	70	26.1	18.4	19.8
12B01	West Fork	6000	2/25	56	21.8	9.4	13.4*
12B04	Wrong Creek	5700	3/1	56	17.8	13.5	14.5*
12B03	Wrong Ridge	6800	3/1	73	26.0	17.3	19.6*

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13A05M	Marias Pass	5250	54	6.5	3/1	5.8	4.4	5.3

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	SUN RIVER					
0786	Gibson Dam (at)(10)	Apr-Sept	750	123	814	610
	TWO MEDICINE CREEK					
0920	Browning (near)(20)	Apr-Sept	320	118	303	271
	BADGER CREEK					
0925	Browning (near)	Apr-Sept	165	115	190	143
	CUT BANK CREEK					
0990	Cut Bank (near)	Apr-Sept	156	110	141	142
	MARIAS RIVER					
0995	Shelby (near)(9)	Apr-Sept	750	115	775	651
	MISSOURI RIVER					
0908	Fort Benton (at)(5)	Apr-Sept	4280	129	4848	3319

(5) Adjusted for storage in Canyon Ferry Reservoir.
(9) Adjusted for storage in Two-Medicine, Four Horns, Lake Francis and Swift Reservoir.
(10) Adjusted for storage in Gibson Reservoir and diversions.
(20) Adjusted for storage in Two-Medicine Reservoir and diversions into Two-Medicine Canal.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0795	Gibson	105.0	48.0	17.3	58.5
0805	Pishkun	32.0	17.4	17.2	19.7
0820	Willow Creek	32.3	15.8	21.1	18.4
0940	Swift	30.0	-	10.8	22.0
0955	Lake Francis	112.0	-	33.5	91.8
1013	Tiber	1313.0	671.0	646.6	629.4

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK

MISSOURI RIVER (MAIN STEM) BASIN

MONTANA

as of

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is good for streams tributary to the Missouri River. Late season irrigation water supplies are expected to be good on streams with high elevation headwaters as the snow pack is very dense for this time of year and should help delay snowmelt. The April through September streamflow is forecast to rank about fourth highest in the last 30 years in the Missouri and fourth to sixth highest on tributary streams. Some high water will probably occur but the magnitude will depend almost entirely on temperatures and precipitation during the snowmelt period.

Snow measurements indicate the mountain snow pack is slightly greater than a year ago and about 30 percent above average. There is a very heavy snow cover in the higher elevations, decreasing to below average at the lower elevations.

Soil moisture is generally below average in the higher elevations and above average at the lower elevations.

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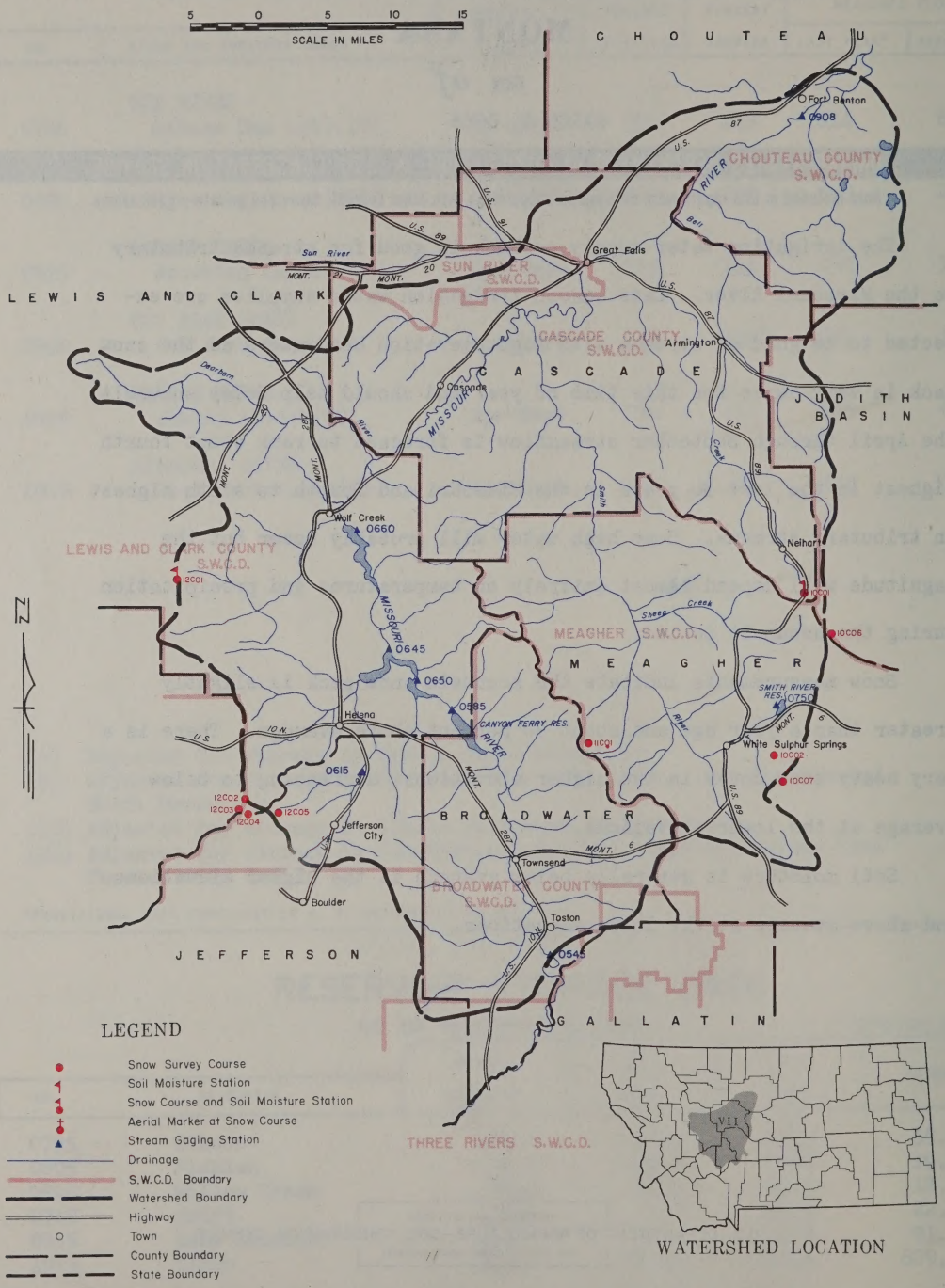
MISSOURI RIVER (MAIN STEM) BASIN



SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
11C01	Boulder Mountain	7950	2/23	54	17.9	16.2	-
12C05	Chessman Reservoir	6200	3/2	16	3.8	6.3	4.0
10C07	Elk Peak	8000	2/24	60	19.5	15.6	-
10C02	Grasshopper	7000	2/24	26	6.6	7.0	4.3
10C01	Kings Hill	7500	2/28	48	15.3	12.7	11.0
10C06	Spur Park	8000	2/25	69	23.4	18.8	-
12C01	Stemple Pass	6900	3/3	42	11.9	10.0	9.2
12C02	Ten Mile Lower	6250	3/2	30	7.7	8.0	6.3
12C03	Ten Mile Middle	6800	3/1	45	12.1	10.7	9.1
12C04	Ten Mile Upper	8000	3/1	51	16.3	14.4	11.7

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
10C01M	Kings Hill	7420	48	11.8	2/25	7.8	7.6	-
12C08M	Stemple Pass	6350	48	5.9	2/25	4.2	3.9	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MISSOURI RIVER					
0545	Toston (at)(3)	Apr-Sept	2800	130	2694	2147
0908	Fort Benton (at)(5)	Apr-Sept	4280	129	4848	3319
	PRICKLY PEAR CREEK					
0615	Clancy (near)	Apr-Sept	25.6	117	35.5	22.0
	SUN RIVER					
0786	Gibson Dam (at)(10)	Apr-Sept	750	123	737	610

(3) Adjusted for storage in Hebgen and Ennis Lakes.
(5) Adjusted for storage in Canyon Ferry Reservoir.
(10) Adjusted for storage in Gibson Reservoir and diversions.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0585	Canyon Ferry	2043.0	1763.0	1737.0	1514.9
0645	Lake Helena	10.4	10.2	8.4	7.8
0650	Hauser Lk. & Lk. Helena	61.9	61.3	56.2	53.9
0660	Holter Lake	81.9	40.1	22.5	50.6
0750	Smith River	10.7	8.7	7.6	5.6

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK
JEFFERSON RIVER and TRIBUTARY BASINS
MONTANA
as of

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE
Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is excellent. Late season irrigation water supplies are expected to be good as the snow pack is very dense for this time of year and should help delay snowmelt. The April through September streamflow on the Red Rock is forecast to be the second largest runoff in the past 30 years, exceeded only by 1952. The Big Hole is forecast to produce the third highest runoff, exceeded only in 1943 and 1948. The Boulder River, not having high elevation headwaters, is expected to produce less runoff than last year and about 20 percent above the 1948-62 average. The high runoff in the Beaverhead should provide considerable water for storage in Clark Canyon Reservoir.

There is little question that high water will occur. The magnitude will depend almost entirely on temperatures and precipitation during the snowmelt period. A favorable factor is the dense snow as it is not as susceptible to fast melt as would be a less dense pack.

Snow measurements indicate the mountain snow pack is about 60 percent greater than a year ago and 50 percent above the 1948-62 average. Most high elevation snow courses have maximum or near maximum of record water contents for this time of year.

Report prepared by
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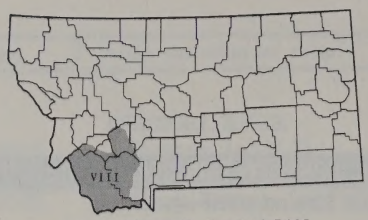
"The Conservation of Water begins with the Snow Survey"

JEFFERSON RIVER and TRIBUTARY BASINS



WATERSHED LOCATION

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13D20	Abundance Lake	8800	3/1	67	24.1	15.0	-
12C07	Berry Meadow	7300	3/1	29	8.0	7.2	-
13D10	Bloody Dick	7600	2/24	47	15.4	8.6	9.6
11D07	Call Road	8050	3/1	43	12.8	9.0	-
12E03	Camp Creek	6800	2/26	40	13.1	5.7	8.7
12D04	Carter Creek	7400	2/28	23	4.4	3.6	-
12C05	Chessman Reservoir	6200	3/2	16	3.8	6.3	4.0
11D08	Clover Meadow	8600	3/1	62	21.7	12.6	-
11D06	Crockett Lake	8400	3/1	42	12.6	8.6	-
13D19	Darkhorse Lake	8600	3/2	89	34.6	22.1	-
12E07	Divide	7900	3/2	48	15.3	7.8	-
13D15	Elk Horn Springs	7800	2/26	44	13.4	7.1	8.8
13D21	Foolhen	8280	3/1	62	22.4	12.4	-
13D02	Gibbons Pass	7100	2/25	80	27.5	18.8	21.0
13D09	Gold Stone	8100	2/24	57	19.7	10.8	12.4
13D08	Jahnke Creek	7340	2/24	42	13.0	7.8	8.8
11E12	Kilgore	6200	2/26	35	11.9	6.9	8.8
11E04	Lakeview Canyon	6930	2/24	52	18.2	7.0	9.6
11E03	Lakeview Ridge	7400	2/24	46	16.2	6.6	8.1
13E01	Lemhi Pass	7480	2/23	46	14.6	6.8	7.1
13D16	Moose Creek	6200	2/25	65	21.0	16.2	14.9
11D03	North Meadow	7500	2/25	38	11.4	5.0	-
12E06	Notch	8500	3/2	53	17.4	10.8	-
12C06	Picnic Grounds	6500	3/1	20	4.4	4.2	4.2*
12D01	Pipestone Pass	7200	2/26	20	5.2	4.0	4.5
13C07	Storm Lake	7780	2/26	48	16.4	11.4	11.7*
12C02	Ten Mile Lower	6250	3/2	30	7.7	8.0	6.3
12C03	Ten Mile Middle	6800	3/1	45	12.1	10.7	9.1
12C04	Ten Mile Upper	8000	3/1	51	16.3	14.4	11.7
13E02	Trail Creek	7090	2/23	41	12.2	5.7	6.4
12E01	White Pine Ridge	8850	3/2	25	6.5	3.7	4.4

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13D18M	Gibbons Pass	7100	48	7.1	2/26	5.5	5.5	-
11E13M	Lakeview	6700	48	15.3	3/3	5.9	8.2	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	RED ROCK RIVER					
0110	Kennedy Ranch (at)	Apr-Sept	100	139	83.7	71.2
0125	Monida (near)(1)	Apr-Sept	120	140	110	78.4
	BIG HOLE RIVER					
0255	Melrose (near)	Apr-Sept	950	132	849	718
	BOULDER RIVER					
0330	Boulder (near)	Apr-Sept	90.0	118	108	76.3
	JEFFERSON RIVER					
0345	Sappington (at)	Apr-Sept	1260	130	1294	974

(1) Adjusted for storage in Lima Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0120	Lima	84.0	45.7	-	26.1
0153	Clark Canyon	225.6	74.2	-	-
0205	Ruby	38.8	-	-	23.0

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK

MADISON and GALLATIN RIVER BASINS

MONTANA

as of

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is excellent. Late season irrigation water supplies are expected to be good as the snow pack is very dense for this time of year and should help delay snowmelt. The April through September streamflow is forecast to rank second or third highest runoff in the past 30 years. Volume of runoff forecast for the Madison River was exceeded only in 1943 and 1952.

Streams tributary to the Madison River with high elevation headwaters are also expected to produce comparable runoff. Streams with low elevation headwaters will produce considerably less runoff.

In the Gallatin drainage, the Hyalite Creek forecast has been exceeded only in 1948. In the past 30 years, the Gallatin River above Gateway produced more water than this year's forecast in 1943, 1952 and 1962. As in the Madison, streams with high elevation headwaters will produce a considerably higher runoff than lower elevation streams.

There is little question that high water will occur on most streams. The magnitude will depend almost entirely on temperatures and precipitation during the snowmelt season. This year two factors are favorable. The dense snow is not as susceptible to fast melt as would be a less dense pack. Soil moisture at the high elevations varies from dry to below average. In lower elevations, soil moisture is near to above average.

Snow measurements indicate the mountain snow cover in the Madison is about 75 percent greater than a year ago and 50 percent above the 1948-62 average. In the Gallatin, mountain snow cover is about 50 percent more than last year and about 60 percent above average. Many high elevation snow courses have maximum or near maximum of record water content for this time of year.

Report prepared by
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"The Conservation of Water begins with the Snow Survey"

MADISON and GALLATIN RIVER BASINS

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
10D14	Arch Falls	7350	2/27	46	14.8	10.4	-
11D09	Bear Basin	8150	3/2	67	22.6	17.8	-
11E09	Big Springs	6500	2/24	69	24.6	14.9	19.6
11D07	Call Road	8050	3/1	43	12.8	9.0	-
10E03	Canyon	7750	2/28	65	23.4	12.4	13.1
11D08	Clover Meadow	8600	3/1	62	21.7	12.6	-
10D05	Crevice Mountain	8400	3/1	43	11.8	8.1	7.5
11D06	Crockett Lake	8400	3/1	42	12.6	8.6	-
10D04	Devil's Slide	8100	2/27	73	26.3	20.2	17.4
11E05	Hebgen Dam	6550	2/25	47	14.2	9.8	10.8
10D03	Hood Meadow	6600	2/27	39	11.6	8.9	7.6
11E10	Island Park	6315	2/24	60	20.4	11.1	15.3
11D05	Jack Creek	7500	2/26	23	6.4	5.2	-
11D10	Little Park	7400	3/2	59	18.6	14.2	-
10D01	New World	6700	2/26	40	11.6	11.4	8.6
10E02	Norris Basin	7500	3/1	48	14.1	8.4	9.0*
11D03	North Meadow	7500	2/25	38	11.4	5.0	-
10D10	Sacajawea	6550	2/26	48	16.4	11.2	11.1*
10E07	Thumb Divide	7900	2/24	79	29.3	14.0	20.0
11E06	Twenty-One Mile	7150	3/2	70	27.0	14.1	15.8
11E08	Valley View	6500	2/24	64	24.0	14.8	13.2
11E07	West Yellowstone	6700	2/25	46	15.0	8.3	10.6

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
10D11M	Battle Ridge	6020	48	17.6	3/1	15.6	9.3	-
11D02M	College Site	4856	54	14.5	3/2	10.0	6.9	9.2
10D04M	Red Bluff	4800	40	4.7			1.9	-
11E06M	Twenty-One Mile	7150	48	8.8	2/28	1.5	3.8	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MADISON RIVER					
0375	West Yellowstone (near)	Apr-Sept	248	119	216	208
0385	Grayling (near)(2)	Apr-Sept	510	121	474	420
0410	McAllister (near)(3)	Apr-Sept	910	126	870	718
	GALLATIN RIVER					
0435	Gateway (near)	Apr-Sept	570	127	551	447
	BRIDGER CREEK					
0485	Bozeman (near)	Apr-Sept	25.8	130	23.5	19.9
	HYALITE CREEK					
0500	Bozeman (near)(4)	Apr-Sept	47.0	132	45.8	35.6
	GALLATIN RIVER					
0525	Logan (at)	Apr-Sept	640	137	621	467
	MISSOURI RIVER					
0545	Toston (at)(3)	Apr-Sept	2800	130	2694	2147

(2) Adjusted for storage in Hebgen Lake.
(3) Adjusted for storage in Hebgen and Ennis Lakes.
(4) Adjusted for storage in Middle Creek Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0380	Hebgen Lake	384.8	220.8	211.3	179.1
0405	Ennis Lake	41.0	33.5	39.2	37.3
0495	Middle Creek	8.0	3.9	3.0	3.6

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK
JUDITH and MUSSELSHELL RIVER BASINS
MONTANA

as of

MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is excellent. The late season irrigation water supply should be good from streams with high elevation headwaters as the snow is very dense for this time of year. There is a heavy snow pack at higher elevations.

The April through September runoff from snowfed streams is forecast to be the third or fourth highest of record in the past 30 years. The South Fork Musselshell forecast was previously exceeded only in 1943, 1948 and 1952. Other streams in this area are expected to produce comparable runoff.

High water will probably occur on all streams. However, the magnitude will depend almost entirely on temperatures and precipitation during the snowmelt period.

Generally, soils at higher elevations have below average moisture, while they are near average at lower elevations.

A new snow course was established in the head of the South Fork Shields which should provide an index to the high elevation snow in the Crazy Mountains.

Report prepared by
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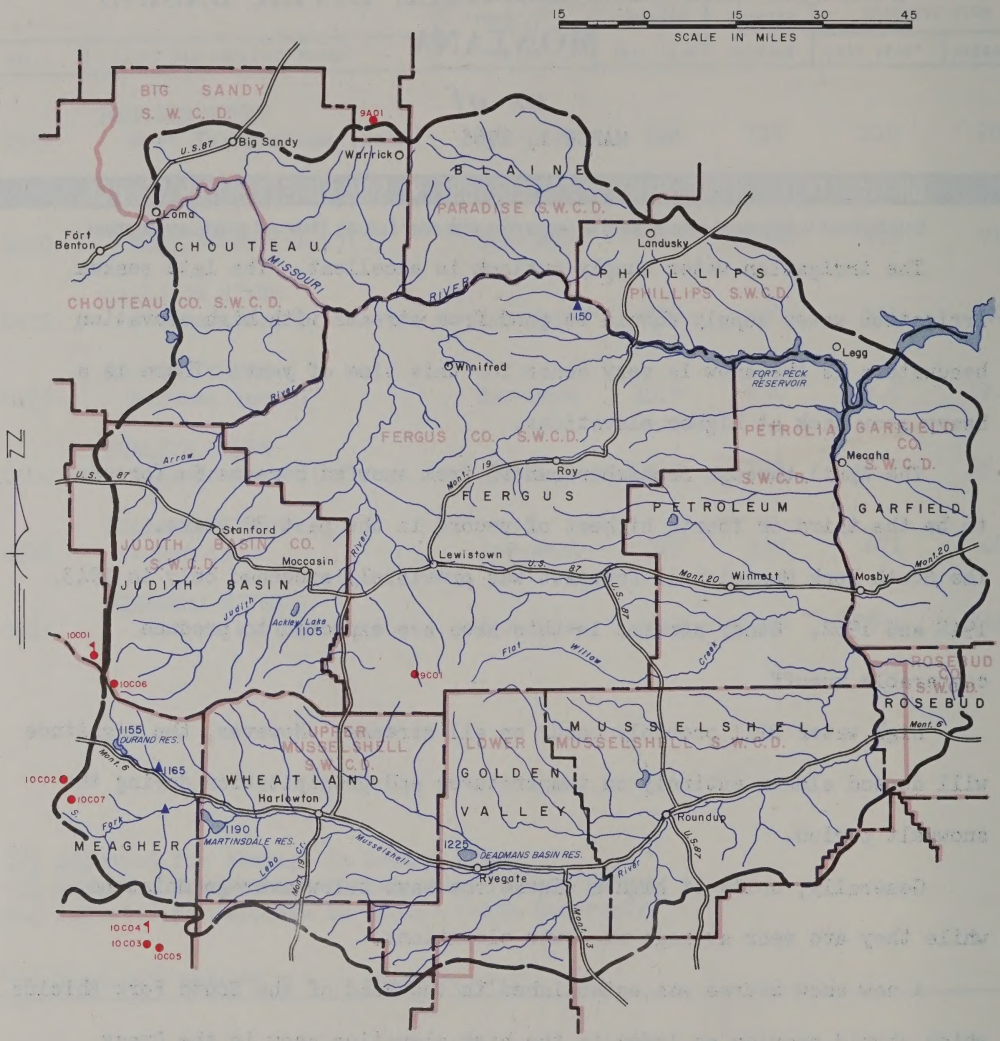
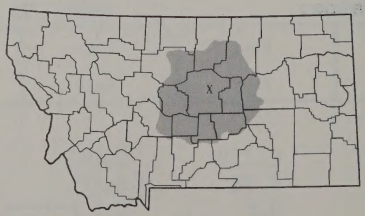
JUDITH and MUSSELSHELL RIVER BASINS



LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary



WATERSHED LOCATION

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
10C05	Bald Ridge	7500	3/1	48	15.6	11.4	9.2*
9C01	Crystal Lake	6100	3/3	44	13.7	14.4	10.5
10C07	Elk Peak	8000	2/24	60	19.5	15.6	-
10C02	Grasshopper	7000	2/24	26	6.6	7.0	4.3
10C01	Kings Hill	7500	2/28	48	15.3	12.7	11.0
10C03	Porcupine R.S.	6500	3/1	33	9.3	8.4	6.3
9A01	Rocky Boy	5200	2/26	18	4.6	4.2	4.2
10C08	South Fork Shields	8400	3/1	81	29.4	-	-
10C06	Spur Park	8000	2/25	69	23.4	18.8	-

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
10C01M	Kings Hill	7420	48	11.8	2/25	7.8	7.6	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	SOUTH FORK MUSSELSHELL R.					
1185	Martinsdale (above)	Apr-Sept	68.0	139	59.4	48.8
	MISSOURI RIVER					
1150	Zortman (near)(6)	Apr-Sept	5700	126	6697	4508

(6) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
1105	Ackley Lake	5.8	-	-	3.8
1165	Durand	7.0	6.3	4.2	4.2
1190	Martinsdale	23.1	7.5	8.0	8.1
1225	Deadman's Basin	72.2	48.0	51.6	39.8

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK
UPPER YELLOWSTONE RIVER BASIN
MONTANA

as of
MARCH 1, 1965

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is excellent. Late season irrigation water supplies should be good as the snow pack is very dense for this time of year and will help delay snowmelt. Streams with the higher elevation headwaters will produce more runoff this season as the high elevation snow pack is generally near maximum of record.

The April through September runoff is forecast to be third to fifth highest flow in the past 30 years. The Yellowstone above Livingston exceeded this year's forecast in only 1943 and 1956. The Shields River produced more water in 1948, and the Stillwater in 1943 and 1957. In the Clarks Fork and Rock Creek drainages, forecast flow has been exceeded in about five previous years.

High water will probably be experienced on all streams. The magnitude will depend on temperatures and precipitation during the snowmelt season. One factor is favorable this year. The dense snow is not as susceptible to fast melt as would be a less dense snow pack.

Snow measurements indicate the mountain snow pack is about 50 percent more than a year ago and about 55 percent above the 1948-62 average. Most high elevation snow courses have water content that is third highest to maximum of record for this time of year.

A new snow course has been established in the head of the South Fork of the Shields River. This course should provide a good index to high elevation snow accumulation in the Crazy Mountains.

Report prepared by
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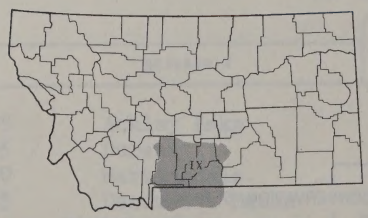
"The Conservation of Water begins with the Snow Survey"

UPPER YELLOWSTONE RIVER BASIN



WATERSHED LOCATION

LEGEND

- Snow Survey Course
- Soil Moisture Station
- Snow Course and Soil Moisture Station
- Aerial Marker at Snow Course
- Stream Gaging Station
- Drainage
- S.W.C.D. Boundary
- Watershed Boundary
- Highway
- Town
- County Boundary
- State Boundary

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
10C05	Bald Ridge	7500	3/1	48	15.6	11.4	9.2*
9D01	Camp Senia	7890	3/2	28	5.8	5.2	4.8*
10E03	Canyon	7750	2/28	65	23.4	12.4	13.1
10D05	Crevice Mountain	8400	3/1	43	11.8	8.1	7.5
10D04	Devil's Slide	8100	2/27	73	26.3	20.2	17.4
10E06	East Entrance	7000	3/1	40	12.1	8.3	10.4*
9D05	Grizzly Peak	8400	3/1	60	16.8	9.7	-
10D06	Independence	8000	2/28	69	21.6	15.8	15.6*
10E04	Lake Camp	7850	2/28	48	13.2	6.3	9.0
9E01	Lodgepole	8200	3/1	39	9.9	9.1	8.6*
0E01	Lupine Creek	7300	3/1	46	14.2	8.2	9.5
10D12	Monument Peak	9000	2/28	91	33.6	21.8	18.1*
10E02	Norris Basin	7500	3/1	48	14.1	8.4	9.0*
10D07	Northeast Entrance	7400	2/27	41	13.1	7.4	7.5
10C03	Porcupine R.S.	6500	3/1	33	9.3	8.4	6.3
10D10	Sacajawea	6550	2/26	48	16.4	11.2	11.1*
10C08	South Fork Shields	8400	3/1	81	29.4	-	-
10E05	Sylvan Pass	7100	3/1	52	16.8	10.1	12.6
10E07	Thumb Divide	7900	3/24	79	29.3	14.0	20.0
9D04	Timberline Creek	8850	3/2	61	19.5	12.2	10.9*
9D02	West Rosebud	7500	3/2	52	16.9	6.5	-

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
10D11M	Battle Ridge	6020	48	17.6	3/1	15.6	9.3	-
10D07M	Northeast Entrance	7350	48	9.4	2/27	5.9	7.8	-

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	YELLOWSTONE RIVER					
1915	Corwin Springs (at)	Apr-Sept	2320	123	2128	1877
1925	Livingston (near)	Apr-Sept	2660	125	2392	2127
2145	Billings (at)	Apr-Sept	5100	130	4400	3913
3090	Miles City (at)(12)	Apr-Sept	7800	135		5778
3295	Sidney (near)(12)	Apr-Sept	8000	136		5850
	SHIELDS RIVER					
1935	Clyde Park (at)	Apr-Sept	145	146	133	99.0
	BOULDER RIVER					
2000	Big Timber (at)	Apr-Sept	470	137	375	343
	STILLWATER RIVER					
2050	Absarokee (near)(11)	Apr-Sept	750	136	553	552
	CLARKS FORK RIVER					
2075	Chance (at)	Apr-Sept	700	120	602	583
2085	Edgar (at)	Apr-Sept	735	120	651	609

(11) Adjusted for storage in Mystic Lake.
(12) Adjusted for storage in Buffalo Bill and Boysen Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
2040	Mystic Lake	20.8	8.5	8.6	7.8
2120	Cooney	27.5	14.8	17.9	13.6

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).

WATER SUPPLY OUTLOOK

MILK RIVER BASIN

MONTANA

MARCH 1, 1965 *as of*

UNITED STATES DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Data included in this report were obtained in cooperation with other Federal, State and private organizations

The irrigation water supply outlook is good to excellent. The high elevation snow pack is very dense and above average and should provide a good late season water supply.

March through September streamflow is forecast to be about 10 percent above average and about 5 percent more than last year.

Snow cover in the headwater streams is about 50 percent more than a year ago and 25 percent greater than the 1948-62 average.

Report prepared by
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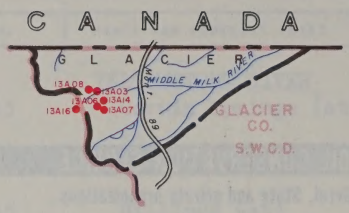
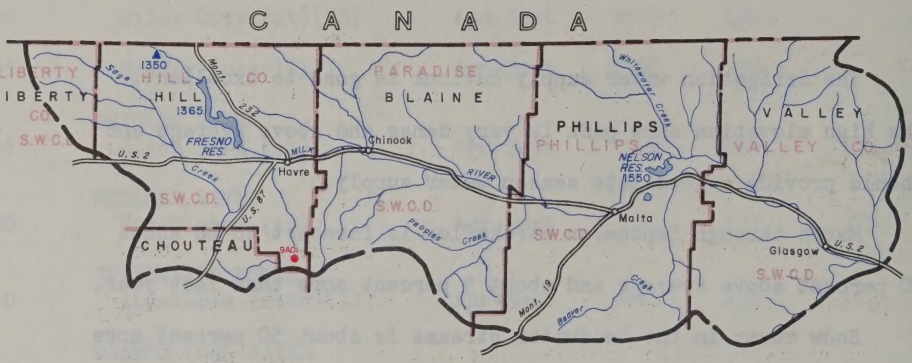
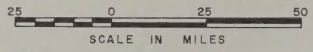
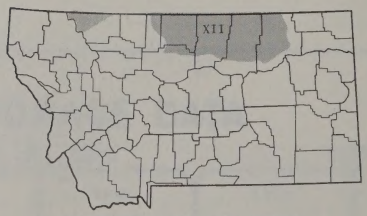
"The Conservation of Water begins with the Snow Survey"

MILK RIVER BASIN









WATERSHED LOCATION

LEGEND

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- State Boundary

SNOW SURVEY DATA

AS OF MARCH 1, 1965

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
13A05	Marias Pass	5250	2/25	65	21.0	12.0	17.3
13A16	Mineral Creek	4000	2/28	70	26.1	18.4	19.8
9A01	Rocky Boy	5200	2/26	18	4.6	4.2	4.2
	CYPRESS HILLS - CANADA						
10AA2	Cress Day B	3450	3/1	8	2.8	1.2	1.3*
9AA1	Cypress Park C	4000	3/2	7	1.9	4.4	4.1*
10AA1	Elkwater Lake A	4100	3/1	7	1.9	1.9	1.1*
7AA1	Val Marie D.	2700	3/3	11	3.0	0.1	1.1*

SOIL MOISTURE DATA

AS OF MARCH 1, 1965

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13A05M	Marias Pass	5250	54	6.5			4.4	5.3

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1965

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MILK RIVER					
1350	Eastern Crossing (at)	Mar-Sept	300	110	283	272

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1965

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
1365	Fresno	127.2	62.8	36.4	58.5
1550	Nelson	66.8	35.6	31.5	35.4

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD).